

What is claimed:

1. A composition for forming a thermally conductive polymeric material, comprising:

- 5       a least one thermoplastic polymeric material;  
      a thermally conductive filler material; and  
      at least one solvent in which the at least one thermoplastic polymeric material is at least partially soluble.

10    2. The composition of claim 1, wherein the filler material is a fiber.

3. The composition of claim 2, wherein the fiber is a carbon fiber.

15    4. The composition of claim 1, wherein the composition includes at least 55 wt% of the filler material.

5. The composition of claim 1, wherein the composition includes at least 60 wt% of the filler material.

20    6. The composition of claim 1, wherein the composition includes at least 70 wt% of the filler material.

7. The composition of claim 1, wherein the composition further comprises a second thermally conductive filler material.

25    8. The composition of claim 7, wherein the second filler material is selected from boron nitride particles, Teflon fibers, Teflon particles and aluminum flakes.

30

9. A thermally conductive polymeric material, comprising:  
at least one polymeric material; and  
at least 55 wt% of a thermally conductive filler material; and
- 5 10. The thermally conductive polymeric material of claim 9, wherein the thermally conductive filler material is a fiber.
11. The thermally conductive polymeric material of claim 10, wherein the fiber is a carbon fiber.
- 10 12. The thermally conductive polymeric material of claim 11, wherein the fiber length is at least about 200  $\mu\text{m}$ .
13. The thermally conductive polymeric material of claim 9, further  
15 comprising a second filler material.
14. The thermally conductive polymeric material of claim 13, wherein the second filler material is selected from boron nitride particles, Teflon fibers, Teflon particles and aluminum flakes.
- 20 15. The thermally conductive polymeric material of claim 9, comprising at least 60 wt% of the filler material.
16. The thermally conductive polymeric material of claim 10, comprising  
25 at least 70 wt% of the filler material.
17. A method for forming a thermally conductive polymeric material, the method comprising the steps of:  
forming a solution by at least partially dissolving a thermoplastic  
30 polymeric material in a solvent;  
adding a thermally conductive filler material to the solution; and  
removing the solvent from the solution.

18. The method of claim 17, wherein the filler material is a fiber.
19. The method of claim 18, wherein the fiber is a carbon fiber.
- 5 20. The method of claim 18, wherein the length of the fiber before forming the solution is substantially the same as after removing the solvent from the solution.
- 10 21. The method of claim 17, wherein the filler material is added in an amount of at least about 55 wt%.
22. The method of claim 17, wherein the filler material is added in an amount of at least about 60 wt%.
- 15 23. The method of claim 17, wherein the filler material is added in an amount of at least about 70 wt%.
24. The method of claim 17, further comprising the step of adding a  
20 second thermally conductive filler material to the solution.
25. A solvent blending method for forming a thermally conductive polymeric material by blending a thermally conductive fibrous filler with a polymeric material, wherein the length of the thermally conductive fibrous  
25 filler after blending is substantially the same as the length of the thermally conductive fibrous filler after forming the thermally conductive polymeric material.

30

26. A method for minimizing fiber breakage when forming a thermally conductive polymeric material comprising:

forming a solution by at least partially dissolving a polymeric material in a solvent;

5 adding a thermally conductive filler material to the solution, the thermally conductive filler material comprising fibers; and removing the solvent from the solution.

10

15